

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A light emitting apparatus comprising:
 - at least two light emitting elements with different chromaticities; and
 - a light emitting element controller that controls light emitted from the light emitting apparatus so as to be a desired chromaticity, wherein
 - the light emitting element controller controls drive currents or drive voltages of the light emitting elements based on a predetermined function of light emitting element temperature variation and drive current, and
 - the predetermined function represents the drive current as a substantially linear function of the temperature.
2. (Canceled)
3. (Currently amended) A light emitting apparatus comprising:
 - at least two light emitting elements with different chromaticities;
 - a light emitting element controller that controls light emitted from the light emitting apparatus so as to be a desired chromaticity; and
 - storage that previously stores drive current values ~~and/or~~ or drive voltage values for a plurality of light emitting element temperatures for controlling the light emitted from the light emitting apparatus so as to be the desired chromaticity, wherein
 - the light emitting element controller controls drive currents ~~and/or~~ or drive voltages of the light emitting elements based on the drive current values ~~and/or~~ or drive voltage values corresponding to a given temperature stored in the storage.
4. (Currently amended) A light emitting apparatus comprising:
 - at least two light emitting elements with different chromaticities;
 - a light emitting element controller that controls light emitted from the light emitting apparatus so as to be a desired chromaticity; and
 - a temperature detector, wherein

the light emitting element controller controls drive currents or drive voltages of the light emitting elements based on a signal from the temperature detector and a predetermined function of light emitting element temperature variation and drive current and the predetermined function represents the drive current as substantially linear function of the temperature.

5. (Currently amended) A light emitting apparatus comprising:

at least two light emitting elements with different chromaticities;
a light emitting element controller that controls light emitted from the light emitting apparatus so as to be a desired chromaticity;
a temperature detector; and
a drive time detector, wherein
the light emitting element controller controls drive currents or drive voltages of the light emitting elements based on signals from the temperature detector and the drive time detector, and a predetermined function of light emitting element temperature variation, drive time and drive current, and the predetermined function represents the drive current as a substantially linear function of the temperature and drive time.

6. (Currently amended) A light emitting apparatus comprising:

at least two light emitting elements with different chromaticities;
a light emitting element controller that controls light emitted from the light emitting apparatus so as to be a desired chromaticity; and
a temperature setter, wherein
the light emitting element controller controls drive currents or drive voltages of the light emitting elements based on a value set in the temperature setter and a predetermined function of light emitting element temperature variation and drive current, and the predetermined function represents the drive current as substantially linear function of the temperature.

7. (Previously presented) The light emitting apparatus according to claim 1, wherein the light emitting element controller controls light emitted from the light emitting apparatus so as to be a desired chromaticity that belongs to white light.

8. (Previously presented) The light emitting apparatus according to claim 1, wherein the light emitting elements are light emitting diodes (LEDs).

9. (Currently amended) An LED lighting comprising:

LEDs with three different chromaticities of red, blue and green LEDs;

an LED controller that controls light emitted from the LED lighting so as to be a desired chromaticity;

the LED controller controls drive currents ~~and/or~~ or drive voltages of the LEDs based on a predetermined function of LED temperature variation and drive current, the predetermined function representing the drive current as a substantially linear function of the temperature, and thus controls the light emitted from the LED lighting so as to be white light, wherein

the LED controller drives one LED with any one of the chromaticities at a constant current.

10. (Original) The LED lighting according to claim 9, wherein the red LED is driven at a constant current.

11. (Canceled)

12. (Currently amended) An LED lighting comprising:

LEDs with three different chromaticities of red, blue and green LEDs; and

an LED controller that controls light emitted from the LED lighting so as to be a desired chromaticity and a desired luminance, wherein

the LED controller controls pulse drive periods of drive currents and/or drive voltages of the LEDs based on a predetermined function of LED temperature variation and drive current, the predetermined function representing the drive current as a substantially linear

function of the temperature, and thus controls the light emitted from the LED lighting so as to be white light with the desired luminance.

13. (Currently amended) An LED lighting comprising:

LEDs with four different chromaticities of red, blue and green LEDs, and a white LED that can emit white light and is composed of a semiconductor light emitting element capable of emitting ultraviolet rays or visible light and a phosphor emitting luminescent radiation caused by excitation of light emitted from the semiconductor light emitting element;
an LED controller that controls light emitted from the LED lighting so as to be a desired color rendering level;

a temperature setter and/or a temperature detector; and

a drive time detector, wherein

the LED controller controls drive currents ~~and/or~~ or drive voltages of the LEDs based on a detected value from the temperature detector, a signal from the drive time detector and a predetermined function of LED temperature variation, drive current and drive time and thus controls the light emitted from the LED lighting so as to be the desired color rendering level as white light, the predetermined function representing the drive current as a substantially linear function of the temperature, wherein

the LED controller drives one LED with any one of the chromaticities at a constant current.

14. (Currently amended) An LED light emitting apparatus comprising:

LEDs of at least red, blue and green colors; and

a control portion having

a non-volatile memory capable of ~~receiving/providing~~ receiving or providing information for chromaticity maintenance for temperature of the LED light emitting apparatus;

a control circuit that can read the information on respective colors and write control information into red, blue and green color setting registers at power startup,

a calculation circuit that performs calculation based on signals from the respective color setting registers and a temperature information signal that is received from a temperature measurement element through a temperature information processing portion,

digital-analog converters for respective colors that converts output from the calculation circuit, and
current sources for respective colors that provide drive currents for the red, blue and green LEDs, wherein
the information for chromaticity maintenance for temperature that is ~~received/provided~~
~~by/from~~ received, provided by and from the non-volatile memory contains predetermined functions of drive current; a temperature coefficient, and reference chromaticity and luminance data; or drive current values for temperatures, and
the predetermined function of drive current for the red LED represents that a control current value is constant for temperature, and the predetermined functions of drive current for green and blue LEDs represent that control current values are substantially linear functions of temperature.

15. (Canceled)

16. (Currently amended) An LED light emitting apparatus comprising:

LEDs of at least red, blue and green colors; and
a control portion having
a non-volatile memory capable of ~~receiving/providing~~ receiving or providing information for chromaticity and luminance maintenance for temperature of the LED light emitting apparatus; a control circuit that can read the information on respective colors and write control information into red, blue and green color setting registers at power startup;
a calculation circuit that performs calculation based on signals from the respective color setting registers and a temperature information signal that is received from a temperature measurement element through a temperature information processing portion,
digital-analog converters for respective colors that converts output from the calculation circuit, and
current sources for respective colors that provide drive currents for the red, blue and green LEDs, wherein

the information for chromaticity and luminance maintenance for temperature that is ~~received/provided by/from~~ received, provided by and from the non-volatile memory contains predetermined functions of drive current; a temperature coefficient, and reference chromaticity and luminance data; or drive current values for temperatures, the predetermined function representing the drive current as a substantially linear function of the temperature.

17. (Currently amended) ~~The LED~~ An LED light emitting apparatus ~~according to claim 16,~~ comprising:

LEDs of at least red, blue and green colors; and
a control portion having
a non-volatile memory capable of receiving or providing information for chromaticity and luminance maintenance for temperature of the LED light emitting apparatus; a control circuit that can read the information on respective colors and write control information into red, blue and green color setting registers at power startup;
a calculation circuit that performs calculation based on signals from the respective color setting registers and a temperature information signal that is received from a temperature measurement element through a temperature information processing portion,
digital-analog converters for respective colors that converts output from the calculation circuit, and
current sources for respective colors that provide drive currents for the red, blue and green LEDs, wherein
the information for chromaticity and luminance maintenance for temperature that is received, provided by and from the non-volatile memory contains predetermined functions of drive current; a temperature coefficient, and reference chromaticity and luminance data; or drive current values for temperatures, the predetermined functions for the red, green and blue LEDs represents that representing control current values are as
cubic functions of temperature.

18. (Currently amended) An LED light emitting apparatus comprising:

LEDs of red, blue and green colors;

current sources for the LEDs of respective colors that are electrically connected to the

LEDs;

digital-analog converters for respective colors that are electrically connected to the current sources;

setting registers for the LEDs of respective colors that are electrically connected to the digital-analog converters;

a control circuit that is electrically connected to the setting registers; and

a non-volatile memory that is electrically connected to the control circuit, wherein the control circuit includes electrical input wire connection of temperature information through a temperature information processing portion from a temperature sensing element of the LEDs, wherein

the control circuit calculates control current values for LEDs of respective colors based on current setting data for temperature or predetermined functions of drive current stored in the non-volatile memory, and the temperature information that is provided therein, and thus performs light emission control drive of the LEDs based on the values that are provided into the setting registers, the predetermined function being expressed the drive current as substantially linear function of the temperature.

19. (Previously presented) The LED light emitting apparatus according to claim 14, wherein the red LED is composed of a AlInGaP group semiconductor material, and the blue and green LEDs are composed of a nitride group semiconductor material.

20. (Currently amended) A control method of a light emitting apparatus that comprises at least two light emitting elements with different chromaticities, and a light emitting element controller that controls light emitted from the light emitting apparatus so as to be a desired chromaticity, wherein the light emitting element controller controls the light emitting elements based on a predetermined function of light emitting element temperature variation and drive current, the

predetermined function being expressed the drive current as substantially linear function of the temperature.

21. (New) A light emitting apparatus comprising:
- at least two light emitting elements with different chromaticities; and
 - a light emitting element controller that controls light emitted from the light emitting apparatus so as to be a desired chromaticity, wherein
- the light emitting element controller controls drive currents or drive voltages of the light emitting elements based on pre-stored data representing a relation between temperature and current.
22. (New) The light emitting apparatus according to claim 1, wherein the drive current value of the light emitting element with one chromaticity is constant for temperature variation, while another drive current function for the light emitting element with another chromaticity is a linear function of temperature variation.